Public Safety Communications Advisory Commission

Standard

Arizona Interoperable Channels Plan and Priority Programming Guide

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This document is reviewed annually. This document was last reviewed 11/19/2013.

Record of Changes

This Record of Changes is used to record revisions to this document, including a brief description of the changes made, the date the changes went into effect by approval of the PSCC, and the appropriate PSIC Office Contact.

Change No.	Date	Description	PSIC Office Contact
0	11/19/2013	Approval by the PSCC. Moved to new format; Added definitions and reference sections. The document had been through numerous versions between August 2010 to January 2012, however a record of changes was not available.	Glade Jarman

Table of Contents

List of Tables

1 Introduction

1.1 Background

In 2009, the Statewide Interoperability Executive Committee (SIEC) undertook efforts to create a standard for operational and technical parameters for use of the 700 MHz public safety band. These efforts included the adoption of a Standard Channel Nomenclature and development of a prioritized list of interoperable channels. As the SIEC and their Technical and Operational Workgroup evaluated options for the creation of the Standard, the scope of work was expanded to include VHF, UHF and 800 MHz public safety bands as well. Concurrently, the National Public Safety Telecommunications Council (NPSTC) and the Association of Public-Safety Communications Officials (APCO) were establishing national standards in channel naming conventions resulting in ANSI Standard (ANS 1.194.1-2010). These channel naming conventions were incorporated into the Department of Homeland Security Office of Emergency Communications (DHS-OEC) National Interoperability Field Operations Guide (NIFOG). As these standards developed, they were also incorporated into Arizona's plan. The first Interoperable Channel Priority Program Guide was approved by the SIEC on October 19, 2010, with the Arizona Interoperable Channels Plan being approved by the SIEC on February 15, 2011.

1.2 Purpose

The purpose of this Plan is to establish requirements and/or recommendations for programming of statewide interoperable channels into subscriber units and to provide guidance on the use of the interoperable channels during day-to-day and emergency use. This Plan is intended to identify and prioritize interoperable channels and to establish consistent naming conventions. It is not intended to cover the operational procedures for use and monitoring.

1.3 Scope

This document provides PSCC/SIEC requirements and recommendations for the VHF, UHF and 700 MHz interoperability spectrum.[1] Administration of the interoperable portion of the 800 MHz spectrum is the responsibility of the 800 MHz NPSPAC Arizona Regional Review Committee. Therefore, while 800 MHz interoperability information is included for purposes of providing a complete reference, 800 MHz users are referred to the Arizona 800 MHz Regional Plan (Region 3 PR Docket 91-143) for requirements and recommendations regarding that spectrum band.

[1] APCO/NENA General Meeting Minutes from December 9, 2005 and Arizona Statewide Interoperability Committee Meeting Minutes from January 24, 2006 mutually confirm the transfer of coordination for the VHF and UHF bands from APCO to the SIEC and SIEC acceptance of coordination planning for the interoperability channels in the VHF, UHF and 700 MHz bands.

1.4 Definitions

- AIRS: Arizona Interagency Radio System, formerly referred to as the Interagency Radio System (IARS) or as the Arizona Emergency Radio System (AERS).
- Bandwidth: The difference between the upper and lower frequencies in a continuous set of frequencies. It is typically measured in hertz.
- CTCSS: Continuous Tone-Coded Squelch System is a circuit that is used to reduce the annoyance of listening to other users on a shared two-way radio communications channel. It is sometimes called tone squelch. Where more than one user group is on the same channel (called *co-channel users*), CTCSS mutes the other users if they are using a different CTCSS tone or no CTCSS.
- DPS: Department of Public Safety
- EMS: Emergency Medical Services
- FCC: Federal Communications Commission
- Hz: Hertz, the unit of frequency in the International System of Units. It is defined as the number of cycles per second of a periodic phenomenon.
- kHz: Kilohertz, one thousand Hertz
- MHz: Megahertz, one million Hertz
- NIFOG: National Interoperability Field Operations Guide
- NGO: Non-governmental Organization
- NPSTC: National Public Safety Telecommunications Council
- POC: Point of Contact
- Project 25 (P25 or APCO-25): A suite of standards for digital radio communications for use by federal, state/province and local public safety agencies in North America to enable them to communicate with other agencies and mutual aid response teams in emergencies.
- PSCC: The Public Safety Communications Advisory Commission provides recommendations to the PSIC Office on the development of standards based systems providing interoperability for public safety agencies' communications statewide.
- PSIC: The Public Safety Interoperable Communications Office is responsible for advancing interoperable communications in Arizona and supporting the PSCC and the SIEC in the performance of their missions.
- Rx: Receiving
- SIEC: The Statewide Interoperability Executive Committee is the sub-committee of the PSCC responsible for technical and operational recommendations to the PSCC. The SIEC

manages the interoperability portions of the 700 MHz, UHF and VHF spectrums, and has operational oversight of AIRS.

- SOP: Standard Operating Procedure
- Trunked radio system: a complex type of computer-controlled two-way radio system that allows sharing of relatively few radio frequency channels among a large group of users.
- Tx: Transmitting
- UHF: Ultra High Frequency
- VHF: Very High Frequency
- WSB: Arizona Department of Public Safety, Wireless Systems Bureau which licenses the frequencies used by the AIRS system, and has engineering and maintenance responsibility for AIRS.

1.5 References

This document refers to the listing of the FCC allocations for the narrowband interoperability spectrum and related programming requirements, available online at: http://www.apcointl.com/new/commcenter911/documents/APCO-NPSTC-ANS1-104-1web.pdf

This document refers to APCO/NPSTC ANS 1.104.1-2010, available online at: http://www.apcointl.org/component/docman/doc_download/137-standard-channel-nomenclature-for-the-public-safety-interoperability-channels.html

1.6 Administration

Arizona's Public Safety Interoperable Communications (PSIC) Office, with guidance from the Statewide Interoperability Executive Committee (SIEC) and the Public Safety Communications Advisory Commission (PSCC), is responsible for administering this procedure.[2]

1.7 Document Terminology

The terms "shall," "must," "will," and "required" are used throughout this document to indicate required parameters and to differentiate from recommended parameters. Recommendations are identified by the words "should," "desirably" and "preferably."

[2] On December 6, 2001, a letter from DPS Director Dennis Garrett to the Federal Communications Commission notified the FCC that the Arizona Public Safety Communications Committee (now named the Public Safety Communications Advisory Committee or PSCC) would provide executive direction and technical support in planning, creating and administering Arizona's interoperability plan. Accompanying the letter was a memo from Arizona Governor Jane Hull instructing DPS to act on her behalf in this matter.

1.8 Updates & Revisions

This document will be reviewed annually and updated as needed. Those wishing to suggest revisions or additions to this document should send their feedback electronically to psic@azpsic.gov or in writing to the PSIC Office, c/o Arizona Strategic Enterprise Technology (ASET) Office at 100 N 15th Avenue, Suite 400, Phoenix, AZ 85007.

Revisions to this document will be reviewed by the Technical and Operational Workgroup, which will recommend appropriate changes to the SIEC. The SIEC must then approve all such changes and submit them for approval to the PSCC. Revised versions of this document will be effective once approved by the PSCC.

If no revisions are required, the "last reviewed" date will be updated and no other changes will be made.

2 Subscriber Programming

2.1 Channels

Every portable and mobile radio in Arizona should include the following channels that are within the same band of operation as the basic radio:

- All of the national interoperable channels. These channels, where possible, should be programmed in a distinctly identified area (i.e. zone, bank, deck) of each radio.
- All of the statewide channels belonging to the Arizona Interagency Radio System (AIRS). See the AIRS Standard Operating Procedures (SOP) for programming information.
- Any other statewide interoperability channels established for the radio's band of operation.

Due to space limitations in some radios, it may not be possible to program all the interoperable channels into all radios. In that case, consult the Interoperable Channel Plan for each frequency band as listed in Appendix A to find the channels prioritized for use in Arizona. Those channels are to be programmed into the radios with the highest priority first, continuing as space permits.

2.2 Nomenclature

Standard nomenclature[3] will be used in Arizona and channel displays will be in accordance with that nomenclature. Since simplex channels have different nomenclature than repeated channels, both must be programmed, in lieu of utilizing a Direct or Talk around Button. The channel tables provide the standard eight character nomenclature to be used.[4]

The standardized format for channel names specifies a maximum length of eight characters. The first character is a spectrum band designator (i.e. L, V, U, 7 or 8). The next three or four characters signify the primary purpose of operations on the channel (i.e. CALL, DATA, FIRE, GTAC, LAW, MED, MOB, TAC or TRVL). The next one or two characters provide a unique channel identifier. Finally, a single character may be used to identify a modification to the default operation type on the channel/channel pair (i.e. "D" for direct or talk around use in simplex operations).

2.3 Common Language Protocol

To provide interoperability among first responder agencies at the local, state and national level, only plain English language shall be used when communicating on any interoperability talkgroup or channel. In order to avoid confusion or misunderstanding, 10-codes, incident codes or signals are not to be used on these talkgroups or channels.

2.4 FCC Allocations and related Programming Requirements

The listing of the FCC allocations for the narrowband interoperability spectrum and related programming requirements can be found on the Association of Public-Safety Communications Officials – International website at:
http://www.apcointl.com/new/commcenter911/documents/APCO-NPSTC-ANS1-104-1web.pdf

2.5 Licensing Requirements

The FCC designated national interoperability channels require no separate FCC license for mobile equipment. Mobile Relay (FB2) and Fixed Stations (FB) require FCC licensing.

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[3] APCO/NPSTC ANS 1.104.1-2010: Nomenclature for the Public Safety Interoperability Channels was approved by the American National Standards Institute (ANSI) on June 9, 2010 and provides a standardized naming format for each Federal Communications Commission (FCC) and National Telecommunications and Information and Administration (NTIA) designated Interoperability Channel in the Public Safety and Federal government Radio Services.

[4] In the case where radios cannot, for technical reasons, support eight character names, a six character name may be used by deleting the first band character and limiting the primary purpose designator to three characters (i.e. CAL, DAT, FIR, and GTC). The six character name may only be used in equipment that is not capable of implementing eight character names.

2.6 Calling Channels

Calling channels are used to contact other users in the region for the purpose of requesting incident related information and assistance, and for setting up tactical communications for specific events. In most cases, the calling party will be asked to move from the calling channel to one of the tactical channels for continuing incident operations or other interoperability communication needs.

2.7 Tactical Channels

All Interoperability channels, except as specifically described by frequency band below, shall be used for conventional-only operation. Normally, users will call a communication/command center on one of the calling channels and be assigned an available tactical channel. By FCC rules, the tactical channels are to be used for coordination activity between different agencies in a mutual aid situation. Incidents requiring multi-agency participation will be coordinated over these channels by the agency controlling the incident. In the event of conflict between multiple activities, prioritized use shall occur according to the following levels:

1. Disasters, large scale incidents, or extreme emergencies requiring mutual aid or interagency communications.
2. Incidents where imminent danger exists to life or property.
3. Other incidents requiring the response of multiple agencies.
4. Pre-planned events requiring mutual aid or interagency communications.
5. Incidents involving a single agency where supplemental communications are needed for short term agency use.
6. Drills, tests and exercises.

In the event of multiple simultaneous incidents within the same priority level, interoperability channels should be allocated with the following priorities in mind:

1. Incidents with the greatest level of exigency (e.g., greater threat to life or property, more immediate need) have priority over less exigent incidents.
2. Agencies with single/limited interoperable options have priority use of those options over agencies with multiple interoperable options.
3. When at all possible, agencies already using an interoperable asset during an event should not be redirected to another resource.

In noninterference instances, tactical channels may be used on a case-by-case basis for emergency activities of a single agency.

3 National VHF Interoperability Channels/Frequencies

The VHF simplex tactical (TAC) channels are narrowband (12.5 kHz) by definition. Default operation should be carrier squelch receive, CTCSS 156.7(5.A) transmit.

Table 1: Non-Federal VHF National Interoperability Channels

Description	Name	Old AZ-SIEC Name	Rx Freq MHz	Rx CTCSS Hz	Tx Freq MHz	Tx CTCSS Hz
Calling	VCALL10	VCALL	155.7525	CSQ	155.7525 base/mobile	CTCSS 156.7 (5A)
Tactical	VTAC11	VTAC1	151.1375	CSQ	151.1375 base/mobile	CTCSS 156.7 (5A)
Tactical	VTAC12	VTAC2	154.4525	CSQ	154.4525 base/mobile	CTCSS 156.7 (5A)
Tactical	VTAC13	VTAC3	158.7375	CSQ	158.7375 base/mobile	CTCSS 156.7 (5A)
Tactical	VTAC14	VTAC4	159.4725	CSQ	159.4725 base/mobile	CTCSS 156.7 (5A)

4 National UHF Interoperability Channels/Frequencies

The UHF simplex tactical (TAC) channels will be narrowband (12.5 kHz) by definition, effective 01/01/2013. Default operation should be carrier squelch receive, CTCSS 156.7(5A) transmit.

Table 2: Non-Federal UHF National Interoperability Repeater Channels

Description	NAME	Old AZSIEC NAME	RX FREQ MHz	RX CTCSS Hz	TX FREQ MHz
Calling	UCALL40	UCALL	453.2125	CSQ	458.2125
Calling	UCALL40D	UCALL_D	453.2125	CSQ	453.2125
Tactical	UTAC41	UTAC1	453.4625	CSQ	458.4625
Tactical	UTAC41D	UTAC1_D	453.4625	CSQ	453.4625
Tactical	UTAC42	UTAC2	453.7125	CSQ	458.7125
Tactical	UTAC42D	UTAC2_D	453.7125	CSQ	453.7125
Tactical	UTAC43	UTAC3	453.8625	CSQ	458.8625
Tactical	UTAC43D	UTAC3_D	453.8625	CSQ	453.8625

5 FCC 700 MHz Public Safety Band

The narrowband (12.5 kHz) voice and data interoperability channels are defined on a nationwide basis. There are two Calling channel sets and 30 Tactical channel sets. Channel sets are comprised of two 6.25 kHz channels each.

5.1 700 MHz Calling Channels

Users should first attempt to call in simplex mode. Use 7CALL50D as the primary calling channel and 7CALL70D as the secondary calling channel. Users should next attempt to call in repeater mode, using 7CALL50 first and then 7CALL70. In addition to the usual calling channel functions, the calling channels may be used to notify users when a priority is declared on one or more of the tactical interoperability channels.

5.2 Monitoring

700 MHz licensees will be responsible for monitoring interoperable calling channels according to operational guidelines established by the PSCC/SIEC for this function.

5.3 Operations

Use the ANSI/TIA 102 Standards (i.e., Project 25 digital protocols) as the Digital Interoperability Standard for the conventional-only mode of operation on the narrowband voice & data interoperability channels[5]. The standard Network Access Code (NAC) $293 should be used for all digital operations on FCC-designated Interoperability Channels where digital modulation is permitted or required. Mobile relay (repeater) stations that are part of a local, regional, or statewide interoperability network may be programmed with a NAC code of F7E to allow the repeater receiver to unmute.

5.4 Encryption

Use of encryption is prohibited on calling channels and permitted on all other interoperability channels. Use of encryption on interoperability channels is generally not recommended.

5.5 Deployable Systems

General Public Safety Services Channels labeled 7TAC51 through 7TAC54 and 7TAC71 through 7TAC74 shall be made available for deployable equipment used during disasters and other emergency events that place a heavy, unplanned burden upon in-place radio systems. The

[5] Voice and Data Interoperability standards were decided in the 4th R&O in Docket 96-86 and can be found in Part 90 of the Code of Federal Regulations (CFR). Voice I/O standard documents are listed in 90.548(a)(i); data I/O standard documents are listed in 90.548(a)(ii).

PSCC/SIEC shall consider the need for both "deployable trunked" and "deployable conventional" systems and make those channels available to all entities in Arizona. Agencies responsible for deployable interoperability resources are encouraged to develop and facilitate the signing of a Memorandum of Understanding (MOU) with each of their interoperability partners for the use of the equipment. These MOUs will allow their interoperability partners to preprogram subscriber equipment and otherwise train and prepare to use the resource during exercises, planned events and incidents.

5.6 Trunking on the Interoperability Channels

Trunking the Interoperability channels on a secondary basis shall be limited to operation on eight specific 12.5 kHz channel sets, divided into two subsets of four 12.5 kHz channels. One subset is defined by 7TAC51 through 7TAC54 and the other by 7TAC71 through 7TAC74. In Arizona, the following six channel sets are recommended for use:

12.5 kHz Channel Pair	Name	12.5 kHz Channel Pair	Name
23/24	7TAC51	263/264	7TAC54
103/104	7TAC52	817/818*	7TAC73*
183/184	7TAC53	897/898	7TAC74

*Subject to restrictions on the border with Mexico

The City of Mesa Police Department has requested and been approved by the SIEC for the use of the six channel sets for a 700 MHz mobile trunked system with cache radios to be utilized as an interoperable UASI asset.

Table 3: MESA PD 700 MHz Portable Trunked Channel Plan

	NAME	BANDWIDTH	RX FREQ MHz	RX NAC	TX FREQ MHz	TX NAC
1	7TAC51	12.5 kHz	769.14375	3966 or $F7E	799.14375	659 or $293
2	7TAC51D	12.5 kHz	769.14375	3966 or $F7E	769.14375	659 or $293
3	7TAC52	12.5 kHz	769.24375	3966 or $F7E	799.64375	659 or $293
4	7TAC52D	12.5 kHz	769.24375	3966 or $F7E	769.24375	659 or $293
5	7TAC53	12.5 kHz	770.14375	3966 or $F7E	800.14375	659 or $293
6	7TAC53D	12.5 kHz	770.14375	3966 or $F7E	770.14375	659 or $293
7	7TAC54	12.5 kHz	770.64375	3966 or $F7E	800.64375	659 or $293
8	7TAC54D	12.5 kHz	770.64375	3966 or $F7E	770. 64375	659 or $293
9	7TAC73	12.5 kHz	774.10625	3966 or $F7E	804.10625	659 or $293
10	7TAC73D	12.5 kHz	774.10625	3966 or $F7E	774.10625	659 or $293
11	7TAC74	12.5 kHz	774.60625	3966 or $F7E	804.60625	659 or $293
12	7TAC74D	12.5 kHz	774.60625	3966 or $F7E	774.60625	659 or $293

6 Minimum Programming Guide

Since the 700 MHz band is new, equipment is expected to have the capacity to include all of the interoperability channels. In addition, all 700 MHz subscriber radios could be equipped to operate on all of the NPSPAC 800 MHz conventional mutual aid channels in analog mode per the 800 MHz channel table provided.

The table below recommends minimum programming requirements for those few 700 MHz radios with space limitations.

Table 4: Minimum 700 MHz Programming Guide for Radios with Space Limitations

RECEIVE CHANNEL	TRANSMIT CHANNEL	BASE, MOBILE, OR FIXED (REPEATER OR CONTROL)	ELIGIBILITY /PRIMARY USE	Original NCC Name	COMMON NAME	LIMITATIONS (47 CFR Part 9)
769.24375	799.24375	Mobile-Fixed	Calling Channel	7CAL59	**7CALL50**	90.531(a)(1)(ii)
	SIMPLEX	Base-Fixed-Mobile			**7CALL50D**	
769.39375	799.39375	Mobile-Fixed	EMS	7MED60	**7MED65**	
	SIMPLEX	Base-Fixed-Mobile			**7MED65D**	
769.74375	799.74375	Mobile-Fixed	General Public Safety Service	7TAC63	**7TAC55**	
	SIMPLEX	Base-Fixed-Mobile			**7TAC55D**	
769.89375	799.89375	Mobile-Fixed	Fire	7FIR64	**7FIRE63**	
	SIMPLEX	Base-Fixed-Mobile			**7FIRE63D**	
770.24375	800.24375	Mobile-Fixed	General Public Safety Service	7TAC67	**7TAC56**	
	SIMPLEX	Base-Fixed-Mobile			**7TAC56D**	
770.39375	800.39375	Mobile-Fixed	Law Enforcement	7LAW68	**7LAW61**	
	SIMPLEX	Base-Fixed-Mobile			**7LAW61D**	
770.99375	800.99375	Mobile-Fixed	Other Public Service	7TAC73	**7GTAC57**	
	SIMPLEX	Base-Fixed-Mobile			**7GTAC57D**	
773.25625	803.25625	Mobile-Fixed	Calling Channel	7CAL75	**7CALL70***	90.531(a)(1)(ii)
	SIMPLEX	Base-Fixed-Mobile			**7CALL70D**	

*Subject to restrictions on the border with Mexico

7 FCC 800 MHz National Interoperability Channels

The 800 MHz National Interoperability Channels have a band-width of 20 kHz. Default operation should be carrier squelch receive, CTCSS 156.7(5A) transmit. The calling channel, 8CALL90, is the national calling channel with a designated national CTCSS tone. 8CALL90D is its corresponding direct or talk around channel name. The remaining channels are tactical channels.

The FCC has issued a Report and Order directing the “rebanding” of the 800 MHz spectrum. The result of rebanding will be a contiguous block of frequencies reserved for Public Safety. The rebanding effort has been ongoing since 2005, with the band plan for the U.S.-Mexico border region still under development. The following channel-specific information provides details related to the use of these channels.

Table 5: Non Federal 800 MHz Mutual Aid Repeater Channels[6]

The frequencies listed in parentheses and followed by an asterisk are 15 MHz lower, and will be the frequency used after Arizona (Region 3) is rebanded.

RECEIVE CHANNEL	TRANSMIT CHANNEL	BASE, MOBILE, OR FIXED (REPEATER OR CONTROL)	ELIGIBILITY / PRIMARY USE	800 MHz RPC Name	COMMON NAME	LIMITATIONS (47 CFR Part 9)
866.0125 (851.0125*)	821.0125 (806.0125*)	Mobile-Fixed	Any Public Safety Eligible	AIRSAZ	**8CALL90**	90.16
	SIMPLEX	Base-Fixed-Mobile		AIRSAZ_D	**8CALL90D**	
866.5125 (851.5125*)	821.5125 (806.5125*)	Mobile-Fixed	Any Public Safety Eligible	8TAC1	**8TAC91**	90.16
	SIMPLEX	Base-Fixed-Mobile		8TAC1_D	**8TAC91D**	
867.0125 (852.0125*)	822.0125 (807.0125*)	Mobile-Fixed	Any Public Safety Eligible	8TAC2	**8TAC92**	90.16
	SIMPLEX	Base-Fixed-Mobile		8TAC2_D	**8TAC92D**	
867.5125 (852.5125*)	822.5125 (807.5125*)	Mobile-Fixed	Any Public Safety Eligible	8TAC3	**8TAC93**	90.16
	SIMPLEX	Base-Fixed-Mobile		8TAC3_D	**8TAC93D**	
868.0125 (853.0125*)	823.0125 (808.0125*)	Mobile-Fixed	Any Public Safety Eligible	8TAC4	**8TAC94**	90.16
	SIMPLEX	Base-Fixed-Mobile		8TAC4_D	**8TAC94D**	

[6] See the Region 3 800 MHz Plan section Communications Requirements – Regional Interoperability for details regarding the use of these channels.

APPENDIX A

Arizona Statewide Interoperable Channel Plan - Priority Programming Guides

The Statewide Interoperability Executive Committee (SIEC) has approved these "priority programming guides" to standardize and increase interoperable communications throughout the state in the VHF, UHF, 700 and 800 MHz bands. It is suggested the each agency incorporate these channels into their channel plan the next time their radios are programmed.

VHF

Table 6: Statewide VHF Priority Programming Guide

	NAME	BANDWIDTH	RX FREQ MHz	RX CTCSS Hz	TX FREQ MHz	TX CTCSS Hz
1	VAIRS1	12.5 kHz	155.4750	CSQ	155.1900	141.3
2	VAIRS2	12.5 kHz	155.4750	CSQ	155.1900	131.8
3	VAIRS3	12.5 kHz	155.4750	CSQ	155.1900	110.9
4	VAIRS4	12.5 kHz	155.4750	CSQ	155.1900	123.0
5	VAIRS5	12.5 kHz	155.4750	CSQ	155.1900	167.9
6	SAR NFM	12.5 kHz	155.1600	CSQ	155.1600	127.3
7	VFIRE21	12.5 kHz	154.2800	CSQ	154.2800	CSQ
8	VMED28	12.5 kHz	155.3400	CSQ	155.3400	CSQ
9	VLAW31	12.5 kHz	155.4750	CSQ	155.4750	CSQ
10	VCALL10	12.5 kHz	155.7525	CSQ	155.7525	156.7
11	VTAC11	12.5 kHz	151.1375	CSQ	151.1375	156.7
12	VTAC12	12.5 kHz	154.4525	CSQ	154.4525	156.7
13	VTAC13	12.5 kHz	158.7375	CSQ	158.7375	156.7
14	VTAC14	12.5 kHz	159.4725	CSQ	159.4725	156.7
15	VTAC36*	12.5 kHz	151.1375	CSQ	159.4725	136.5
16	VTAC37*	12.5 kHz	154.4525	CSQ	158.7375	136.5

*NOTE: The use of tactical repeater pairs VTAC36/37 will supersede the use of VTAC11-14 since their Rx/Tx frequencies will be in use. In other words;

- VTAC36 uses the Rx of VTAC11 and the Tx of VTAC14 with a 8.335 MHz separation.
- VTAC37 uses the Rx of VTAC12 and the Tx of VTAC13 with a 4.285 MHz separation.

NOTE: VTAC33 and VTAC34 were replaced by VTAC36 and VTAC37 on January 11, 2012

Radios capable of being programmed in analog, digital or mixed modes should use mixed mode for receive, where possible.

UHF

Table 7: Statewide UHF Priority Programming Guide

	NAME	BANDWIDTH	RX FREQ MHz	RX CTCSS Hz	TX FREQ MHz	TX CTCSS Hz
1	UAIRS1	12.5 kHz	460.3750	CSQ	465.3750	141.3
2	UAIRS2	12.5 kHz	460.3750	CSQ	465.3750	131.8
3	UAIRS3	12.5 kHz	460.3750	CSQ	465.3750	110.9
4	UAIRS4	12.5 kHz	460.3750	CSQ	465.3750	123.0
5	UAIRS5	12.5 kHz	460.3750	CSQ	465.3750	167.9
6	UAIRS_D	12.5 kHz	460.3750	CSQ	460.3750	100.0
7	UCALL40	12.5 kHz	453.2125	CSQ	458.2125	156.7
8	UCALL40D	12.5 kHz	453.2125	CSQ	453.2125	156.7
9	UTAC41	12.5 kHz	453.4625	CSQ	458.4625	156.7
10	UTAC41D	12.5 kHz	453.4625	CSQ	453.4625	156.7
11	UTAC42	12.5 kHz	453.7125	CSQ	458.7125	156.7
12	UTAC42D	12.5 kHz	453.7125	CSQ	453.7125	156.7
13	UTAC43	12.5 kHz	453.8625	CSQ	458.8625	156.7
14	UTAC43D	12.5 kHz	453.8625	CSQ	453.8625	156.7
15	MED-5D	12.5 kHz	463.1000	CSQ	463.1000	136.5
16						

Radios capable of being programmed in analog, digital or mixed modes should use mixed mode for receive, where possible.

800 MHz

The regional AIRS channels, AIRS1 through AIRS5, have CTCSS tones only used in Arizona. The 8TAC91 through 8TAC94 channels are also national channels. Optionally, the channel name can be modified when used in the direct or talk around mode with the addition of "D" to the end of the channel name (for example, 8TAC92D).

Table 8: Statewide 800 MHz Priority Programming Guide

	NAME	BAND-WIDTH	RX FREQ MHz	RX CTCSS Hz	TX FREQ MHz	TX CTCSS Hz
1	8AIRS1	20 kHz	866.0125	CSQ	821.0125	141.3
2	8AIRS2	20 kHz	866.0125	CSQ	821.0125	131.8
3	8AIRS3	20 kHz	866.0125	CSQ	821.0125	110.9
4	8AIRS4	20 kHz	866.0125	CSQ	821.0125	123.0
5	8AIRS5	20 kHz	866.0125	CSQ	821.0125	167.9
6	8CALL90	20 kHz	866.0125	CSQ	821.0125	156.7
7	8TAC91	20 kHz	866.5125	CSQ	821.5125	156.7
8	8TAC91D	20 kHz	866.5125	CSQ	866.5125	156.7
9	8TAC92	20 kHz	867.0125	CSQ	822.0125	156.7
10	8TAC92D	20 kHz	867.0125	CSQ	867.0125	156.7
11	8TAC93	20 kHz	867.5125	CSQ	822.5125	156.7
12	8TAC93D	20 kHz	867.5125	CSQ	867.5125	156.7
13	8TAC94	20 kHz	868.0125	CSQ	823.0125	156.7
14	8TAC94D	20 kHz	868.0125	CSQ	868.0125	156.7
15	8AZTAC5†	20 kHz	866.0375	CSQ	821.0375	156.7
16	8AZTAC5D†	20 kHz	866.0375	CSQ	866.0375	156.7

† See: Restrictions on the use of 8AZTAC5 and 8AZTAC5D

Radios capable of being programmed in analog, digital or mixed modes should use mixed mode for receive, where possible.

Restrictions on the use of 8AZTAC5 and 8AZTAC5D

The use of 8AZTAC5 and 8AZTAC5D are unique to Arizona with the approval of the Region 3 - 800 MHz Regional Planning Committee. The names of 8TAC95 and 8TAC95D were changed to 8AZTAC5 and 8AZTAC5D on January 11, 2012. These frequencies were also previously called 8TAC5 and 8TAC5D.

The 8AZTAC5 channel must be licensed. License to the 8AZTAC5D channel is provided under the same 8AZTAC5 license.

The Arizona 800 MHz Regional Plan states that all interoperability channel licensees for Mobile Relay (FB2), or Fixed Stations (FB) shall be obtained by and in the name of the entity authorized by the Arizona Regional Review Committee. Other base radios shall be licensed in the name of

the applicant agency. In accordance with FCC Report and Order General Docket 87-112, vehicular, portable, and aircraft stations using either the five National channels or the Statewide interoperability channel frequencies may operate without further FCC authorization. However, the prospective vehicular/portable/aircraft user must comply with 4.5.4 of this section. (See the Arizona Regional Review Committee's (ARRC), Arizona 800 MHz Regional Plan – Section 4.4: Application Procedures.)

The Arizona 800 MHz Regional Plan also states that use of these two frequencies is prohibited in some areas in the Counties bordering California; however, it shall be included in all portable/mobile equipment in all other areas. Use of these two frequencies in La Paz and Mohave Counties is subject to interference from a State of California transmitter located near Needles, California and use is prohibited within a 70 mile radius of the transmitter located at 34º 40' 54"N, 114º 41' 24"W. (See the Arizona Regional Review Committee's (ARRC), Arizona 800 MHz Regional Plan – Section 4.5.2.1: Monitoring Requirements.)

700 MHz

Table 9: Statewide 700 MHz Priority Programming Guide

	NAME	BAND-WIDTH	RX FREQ MHz	RX NAC	TX FREQ MHz	TX NAC
1	7CALL50	12.5 kHz	769.24375	3966 or $F7E	799.24375	659 or $293
2	7CALL50D	12.5 kHz	769.24375	3966 or $F7E	769.24375	659 or $293
3	7MED65	12.5 kHz	769.39375	3966 or $F7E	799.39375	659 or $293
4	7MED65D	12.5 kHz	769.39375	3966 or $F7E	769.39375	659 or $293
5	7TAC55	12.5 kHz	769.74375	3966 or $F7E	799.74375	659 or $293
6	7TAC55D	12.5 kHz	769.74375	3966 or $F7E	769.74375	659 or $293
7	7FIRE63	12.5 kHz	769.89375	3966 or $F7E	799.89375	659 or $293
8	7FIRE63D	12.5 kHz	769.89375	3966 or $F7E	769.89375	659 or $293
9	7TAC56	12.5 kHz	770.24375	3966 or $F7E	800.24375	659 or $293
10	7TAC56D	12.5 kHz	770.24375	3966 or $F7E	770.24375	659 or $293
11	7LAW61	12.5 kHz	770.39375	3966 or $F7E	800.39375	659 or $293
12	7LAW61D	12.5 kHz	770.39375	3966 or $F7E	770.39375	659 or $293
13	7GTAC57	12.5 kHz	770.99375	3966 or $F7E	800.99375	659 or $293
14	7GTAC57D	12.5 kHz	770.99375	3966 or $F7E	770.99375	659 or $293
15	7CALL70	12.5 kHz	773.25625	3966 or $F7E	803.25625	659 or $293
16	7CALL70D	12.5 kHz	773.25625	3966 or $F7E	773.25625	659 or $293

Radios capable of being programmed in analog, digital or mixed modes should use mixed mode for receive, where possible.